

9. ART 34

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What is claimed is:
CLAIMS

1. A method of mixing, aerating or oxygenating ponds, rivers or lakes, sewage/treatment lagoons or effluent beds or air stripping volatile compounds from water or other solutes, the method comprising distributing air or oxygen through a piped system having a plurality of outlet lines branching from a common supply line or manifold, by continuously generating a predetermined minimum volume of air or oxygen and introducing it into the pipe system, delivering a desired quantity of the air or oxygen at each of the outlets by providing a constant flow regulator means in each outlet line which limits the flow to a set amount when the pressure in the pipe system exceeds a predetermined minimum value.
2. A method as claimed in claim 1 in which the minimum volume of air or oxygen exceeds a calculated minimum volume which is required to be delivered from the outlets.
3. A method as claimed in claims 1 or 2 in which substantially the same quantity of air or oxygen is delivered at each outlet irrespective of pressure drop along the pipe, at least within a flow range which is deemed acceptable.
- X 4. A method as claimed in anyone of claims 1 to 3 in which a moving element constant flow regulator is used.
5. A method as claimed in claim 1 in which the pressure is kept substantially constant along the distribution line and an accurate and even quantity of air or oxygen is delivered at each outlet using a moving "O" ring constant flow regulator which operates at its set maximum flow rate to deliver the desired flow at the set pressure.

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- X 6. A system as claimed in claim 1 in which a predetermined minimum volume of air or oxygen is supplied, which volume is calculated to exceed the minimum volume which is to be delivered from all the outlets from the outlet lines.
7. A system as claimed in claim 1 in which the desired flow of air or oxygen is a desired even flow of air or oxygen.
8. A mixing, aeration or oxygenation system to aerate or oxygenate ponds, rivers, or lakes, sewage or effluent treatment lagoons or beds or to airstrip volatile compounds from water or other solutes and comprising an air or oxygen distribution supply line, a source of air or oxygen pressure connected to the distribution supply line, and a plurality of outlet lines branching from the distribution supply line, and characterised by a constant flow regulator disposed in each outlet line to cause a desired flow of air or oxygen to be delivered through the outlet lines.
9. A system as claimed in claim 8 in which the regulator is tuned to deliver the desired calculated supply of air or oxygen required at the outlet line irrespective of changes in supply pressure such that it is self compensating for changes in supply pressure within its designed operating range.
10. A system as claimed in claim 8 in which the regulator is designed to only allow a desired maximum flow (volume) of air or oxygen to pass through at a known pressure of air or oxygen.
11. A system as claimed in claim 10 in which the constant flow regulator comprises an "O" ring moving element ring constant flow regulator.
12. A system as claimed in anyone of claims 8 to 11 in which each outlet line has a suitable outlet nozzle.

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13. A system as claimed in claims 8 to 12 in which the outlet lines are disposed in series along the distribution line.
14. A system as claimed in anyone of claims 8 to 13 in which the source of air or oxygen pressure is a pump which delivers a constant volume of air or oxygen.
15. A system as claimed in anyone of claims 8 to 14 in which the distribution supply line comprises at least one length of pipe.
16. A system as claimed in anyone of claims 8 to 15 in which the distribution supply line comprises a plurality of lengths of pipe branching from a common manifold or having a direct connection with the supply of air or oxygen.
17. A system as claimed in anyone of claims 8 to 16 in which the pipeline includes a return line or is of ring main type.
18. A system as claimed in anyone of claims 8 to 17 in which the outlet lines incorporate a backflow regulation device and/or an isolation ball valve.
19. A method of aerating or oxygenating ponds, rivers or lakes, sewage/treatment lagoons or effluent beds or air stripping volatile compounds from water or other solutes, by distributing air or oxygen through a piped system when constructed and arranged substantially as hereinbefore described with reference to the accompanying drawings.
20. A mixing, aeration or oxygenation system to aerate or oxygenate ponds, rivers, or lakes, sewage or effluent treatment lagoons or beds or to airstrip volatile compounds from water or other solutes constructed and arranged substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings.

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